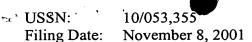


AMENDMENTS TO THE CLAIMS

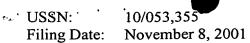
Claims 1-36 (Cancelled)

- 37. (New) A method of generating cultured mast cells, comprising the steps of:
- a) contacting at least one CD34-positive cell with a flt-3 ligand and a stem cell factor to generate a proliferated population of progenitor cells; and thereafter
- b) contacting said progenitor cells with said stem cell factor and a cytokine suitable for differentiating the progenitor cells into mast cells, thereby forming a proliferated population of mast cells.
- 38. (New) The method of claim 37 in which the cytokine is IL-6 and the mast cells are mucosal mast cells.
- 39. (New) The method of claim 38 in which the IL-6 is human IL-6.
- 40. (New) The method of claim 37 in which the cytokine is IL-4 and the mast cells are connective tissue-type mast cells.
 - 41. (New) The method of claim 40 in which the IL-4 is a human IL-4.
 - 42. (New) The method of claim 37 in which the flt-3 ligand is human flt-3 ligand.
 - 43. (New) The method of claim 37 in which the stem cell factor is human stem cell factor.
 - 44. (New) The method of claim 37 in which the CD34-positive cell is a human CD34-positive cell.
 - 45. (New) The method of claim 37 in which the CD34-positive cell is obtained from umbilical cord blood.



46. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10⁷ cells.

- 47. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10^8 cells.
- 48. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10⁹ cells.
- 49. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10^{10} cells.
- 50. (New) The method of claim 37 in which the proliferated population of progenitor cells comprises at least about 10¹¹ cells.
- 51. (New) A population of cultured mast cells prepared by the method of claim 37.
- 52. (New) The population of cultured mast cells of claim 51 in which the cytokine is IL-6 and the mast cells are mucosal mast cells.
- 53. (New) The population of cultured mast cells of claim 52 in which the IL-6 is human IL-6.
- 54. (New) The population of cultured mast cells of claim 51 in which the cytokine is IL-4 and the mast cells are connective tissue-type mast cells.
- 55. (New) The population of cultured mast cells of claim 54 in which the IL-4 is human IL-4.
- 56. (New) The population of cultured mast cells of claim 51 in which the flt-3 ligand is human flt-3 ligand.



- 57. (New) The population of cultured mast cells of claim 51 in which the stem cell factor is human stem cell factor.
- 58. (New) The population of cultured mast cells of claim 51 in which the mast cells are human mast cells.
- 59. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10⁷ cells.
- 60. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10⁸ cells.
- 61. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10⁹ cells.
- des of
- 62. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10¹⁰ cells.
- 63. (New) The population of cultured mast cells of claim 51 in which the proliferated population of progenitor cells comprises at least about 10¹¹ cells.
- 64. (New) A substantially pure population of cultured mast cells.
- 65. (New) The population of cultured mast cells of claim 64 which are human mast cells.
- 66. (New) The population of cultured mast cells of claim 64 which comprises at least about 10⁷ cells.
- 67. (New) A method of identifying an agent capable of producing an altered phenotype in a mast cell, comprising:
- a) contacting the population of cultured mast cells of any one of claims 51 to 63 with at least one candidate bioactive agent; and
 - b) determining whether a cell within the population of mast cells has an altered

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phenotype.

68. (New) The method according to claim 67 in which the altered phenotype is a decrease in degranulation of at least one cell of the mast cells.

- 69. (New) The method according to claim 67, further comprising isolating the candidate bioactive agent that causes the altered phenotype.
- 70. (New) The method according to claim 67 in which the candidate bioactive agent is a small molecule candidate bioactive agent.
- 71. (New) The method according to claim 67 in which the candidate bioactive agent is a peptide and the contacting is done by introducing a nucleic acid encoding the peptide into the mast cells.
- 72. (New) The method according to claim 71 in which the nucleic acid comprises cDNA sequence.
- 73. (New) The method according to claim 71 in which the nucleic acid comprises gDNA sequence.
- 74. (New) The method according to claim 71 in which the nucleic acid comprises mRNA sequence.
- 75. (New) The method according to claim 71 in which the peptide comprises a random peptide.
- 76. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10⁷ cells.
- 77. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10⁸ cells.

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78. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10^9 cells.

79. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10^{10} cells.

80. (New) The method according to claim 67 in which the proliferated population of progenitor cells comprises at least about 10^{11} cells.